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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/508,885	09/23/2004	Tatsukazu Kimura	CU-3914 RJS	8117

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EXAMINER

MAKI, STEVEN D

ART UNIT PAPER NUMBER

1733

DATE MAILED: 09/20/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/508,885

Applicant(s)

KIMURA ET AL.

Examiner

Steven D. Maki

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 07 August 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) 1-4 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 5-12 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
 - 2) ☐ Certified copies of the priority documents have been received in Application No. _____.
 - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date 092304.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____.

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1) The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2) **Claims 5-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Watras (US 2001/0044016) in view of Birdsey (US 1,514,827), Hauber et al (US 6,878,321), Sucech et al (US 5,683,635) and Ainsley et al (US 5,714,032).**

Watras discloses a method for manufacturing gypsum board comprising:

- providing a face paper 111;
- forming a thin layer of gypsum slurry on the face paper from a first gypsum slurry stream using first conduit 115 and spread roller 117;
- forming a gypsum core slurry (the bulk of the slurry) on the thin layer of gypsum slurry from a second gypsum slurry stream using a conduit 119;
- forming a thin layer of gypsum slurry on backing paper from a third gypsum slurry stream using conduit 121 and spreading roller 123;
- folding the face paper on the slurry;
- applying the backing paper so as to form a laminate (stack);
- curing / drying the laminate and cutting to form a gypsum board.

See figure 1, figure 3, paragraphs 25 and 31. Watras teaches that the first and third streams are denser than the second stream for the core (paragraph 25). With respect to slurry composition, Watras discloses using calcined gypsum and water to form a gypsum slurry (paragraph 29).

As to claims 5-12, it would have been obvious to one of ordinary skill in the art to fold the face paper and **adhere** the backing paper to a margin of the face paper since (1) Watras, directed to making wallboards, teaches folding the face paper on the slurry and applying the backing paper over margins of the face paper (figure 3) and (2) Birdsey, directed to making wallboards, suggests folding a face paper sheet on a gypsum slurry and applying and adhering a backing paper sheet to margins of the face paper so that the paper sheets are maintained together (figures 6-9). Furthermore, it would have been obvious to one of ordinary skill in the art to provide the spreader roller with a **length of 98-108%** of the distance between the sides of the board such that the spread and non-spread portions are formed on the face paper since (1) Watras describes and shows spreading gypsum slurry using a spreading roller 117 to cover the face paper across its width (figure 1) and (2) Birdsey suggests allowing the gypsum slurry to flow out to the edges such that the slurry is contained between the upright partially folded edges of the front paper so that sufficient material and yet not a surplus may be used.

With respect to the mixer, it would have been obvious to one of ordinary skill in the art to supply the three streams desired and disclosed by Watras from a **disk-type rotary mixer** by extracting portions for the first and third gypsum streams using fractionation ports of the mixer and using a delivery pipe connected to the mixer to deliver the remainder of the slurry over the face paper so as to form the gypsum core slurry since Hauber et al, directed to making gypsum boards, suggests supplying first and third gypsum slurry streams to facing and backing sheets and supplying a second

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gypsum slurry stream for a core using a disk-type rotary mixer 30, separate controllers 36, 46, 136 and outlets 34, 48, 134 ("delivery pipes") so that, in addition to using one mixer to provide all three streams, additives can be added to each stream as desired (figure 1, col. 6 lines 19-53, col. 11 lines 10-55). As to the slurry in the mixer containing additives, Sucech et al teaches that materials such as accelerators, retarders, fillers, binders, etc. are often employed in slurries to prepare gypsum products and as such it would have been obvious to include at least one of those materials along with the calcined gypsum and water in the rotary type mixer. Although Hauber et al teaches using glass fiber mats for the sheets, Hauber et al teaches that paper may be used. See col. 5 lines 53-65. As to the specific core composition, it would have been obvious to one of ordinary skill in the art to pour **foam** into the remaining slurry used to form the core slurry in view of (1) Hauber et al's teaching to that additive(s) may be added to the core slurry (col. 8 lines 44-57), (2) Hauber et al's suggestion to use a core gypsum slurry 44 containing foaming materials which are not added to the dense slurry 38 applied to the face sheet, and (3) Sucech et al and Ainsley et al's suggestion to add foam to a core slurry obtained from a mixer in order to form a lightweight wallboard.

As to claim 6, Watras teaches spreading gypsum slurry on a backing paper using spreading roller 123. As to claims 7 and 10, the claimed thickness of 0.2 mm to 1.5 mm would have been obvious and could have been determined without undue experimentation in view of Watras' teaching to form thin gypsum slurries on the face paper and backing paper. As to claims 8 and 11, at least Sucech et al suggests using retarder in addition to gypsum and water. As to claims 9 and 12, it would have been

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obvious to add foam to the first and third streams since Sucech et al suggests adding a *low concentration* of foam using inlets 34, 36 since completely unfoamed gypsum may be too hard.

Remarks

3) Applicant's election of Group II claims 5-12 in the reply filed on 8-7-06 is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).

The remaining references are of interest.


4) No claim is allowed.

5) Any inquiry concerning this communication or earlier communications from the examiner should be directed to Steven D. Maki whose telephone number is (571) 272-1221. The examiner can normally be reached on Mon. - Fri. 8:30 AM - 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Crispino can be reached on (571) 272-1226. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Steven D. Maki
September 17, 2006


STEVEN D. MAKI
PRIMARY EXAMINER
9-17-06